

CLAIM AMENDMENTS

Claims 1 to 27 (canceled)

Claim 28 (Currently Amended)

An isolated nucleic acid ~~specific to mycobacteria of M.tuberculosis complex~~ having a nucleotide sequence selected from the group consisting of SEQ ID No: 1, SEQ ID No: 2, ~~the a~~ complement of SEQ ID No: 1, and ~~the a~~ complement of SEQ ID No: 2.

Claim 29 (Currently Amended)

An isolated nucleic acid ~~specific to mycobacteria of M.tuberculosis complex~~ having a nucleotide sequence selected from the group consisting of SEQ ID No: 1 and ~~the a~~ complement of SEQ ID No: 1.

Claim 30 (Currently Amended)

An isolated nucleic acid ~~specific to mycobacteria of M.tuberculosis complex which mycobacteria is different from BCG, whereas said nucleic acid has~~ having a nucleotide sequence selected from the group consisting of SEQ ID No: 2 and ~~the a~~ complement of SEQ ID No: 2.

Claim 31 (Previously Presented)

A cloning or expression vector containing a nucleic acid sequence selected from the group consisting of SEQ ID No: 1, SEQ ID No: 2, the complement of SEQ ID No: 1, and the complement of SEQ ID No: 2.

Claim 32 (previously presented)

A vector of claim 31 which is a plasmid selected from the group consisting of pRegX3Bcl and pRegX3Mt1 deposited at CNCM under Nos. I-1765 and I-1766, respectively.

Claim 33 (Canceled)

Claim 34 (Previously Presented)

A nucleotide probe or nucleotide primer comprising 24 consecutive nucleotides selected from a sequence selected from the group consisting of SEQ ID No:1, SEQ ID No: 2, the complement of SEQ ID No: 1, and the complement of SEQ ID No: 2.

Claim 35 (Currently Amended)

A nucleotide probe ~~or nucleotide primer that hybridizes at 68°C in a 5xSSC hybridization buffer with one of the sequences~~ comprising a sequence selected from the

group consisting of sequence SEQ ID No: 1, or the a
complement of SEQ ID No: 1, or their a corresponding RNA
sequence[~~s~~] of sequence SEQ ID No: 1 or a complement of SEQ
ID No: 1, or their and a corresponding gene of said
corresponding RNA sequences, and that contains a maximum of
21 base pairs.

Claim 36 (Currently Amended)

A nucleotide probe ~~or nucleotide primer that~~
~~hybridizes at 68°C in a 5xSSC hybridization buffer with one~~
~~of the sequences~~ having a sequence comprising two
successive sequences SEQ ID No: 1 followed by a sequence
SEQ ID No: 2 ~~or their corresponding RNA sequences or their~~
~~corresponding gene, and that contains a maximum of 21 base~~
~~pairs.~~

Claim 37 (Currently Amended)

A nucleotide probe ~~for detection of specific sequences~~
~~of nucleic acids of M.tuberculosis complex other than BCG~~
~~wherein said probe consists of~~ 21 base pairs having a
sequence of a region of sequence SEQ ID No: 2 comprising
~~the a~~ GAG codon in positions 40 to 42 or ~~the a~~ complement
of said region.

Claim 38 (Currently Amended)

A nucleotide probe ~~for detection of specific sequences of nucleic acids of *M. tuberculosis* complex other than BCG~~ comprising a sequence composed of nucleotides in positions 31 to 51 of SEQ ID No: 2 or ~~the~~ a complement of said sequence.

Claim 39 (Canceled)

Claim 40 (Currently Amended)

A nucleotide probe ~~of claim 37~~ comprising the sequence SEQ ID No: 2 or ~~the~~ a complement of SEQ ID No: 2.

Claim 41 (Currently Amended)

A nucleotide probe ~~or nucleotide primer that hybridizes at 68°C in a 5xSSC hybridization buffer with~~ labeled by digoxigenin comprising one of the sequences selected from the group consisting of SEQ ID No: 1, SEQ ID No: 2, ~~the~~ a complement of SEQ ID No: 1, and ~~the~~ a complement of SEQ ID No: 2, ~~their~~ a corresponding RNA sequences or ~~their~~ sequence selected from the group consisting of SEQ ID No: 1, SEQ ID NO:2 and a corresponding gene of said corresponding RNA sequence, and that contains a maximum of 21 base pairs, which is labeled by digoxigenin.

Claim 42 (Canceled)

Claim 43 (Canceled)

Claim 44 (Currently Amended)

A nucleotide primer pair ~~of claim 42~~ comprising ~~the~~ a pair of primers 5'GCGCGAGAGCCCGAACTGC3' (SEQ ID No: 4) and 5'GCGCAGCAGAAACGTCAGC3' (SEQ ID No: 5).

Claims 45 and 46 (canceled)

Claim 47 (Currently Amended)

A method of detecting a mycobacteria ~~stain~~ strain of M. tuberculosis complex in a biological sample comprising (1) contacting the biological sample to a pair of primers 5'GCGCGAGAGCCCGAACTGC3' (SEQ ID No: 4) and 5'GCGCAGCAGAAACGTCAGC3' (SEQ ID No: 5) ~~wherein one primer comprises the nucleotide sequence of sequences adjacent to the senX3-regX3 region in the 3' of senX3 region and the other primer comprises the nucleotide sequence of sequences adjacent to the senX3-regX3 region in the 5' of regX3 region~~ under conditions to effect hybridization of the

primers to a nucleotide sequence ~~the specific nucleic acids~~ of mycobacteria strains of *M. tuberculosis* complex;

(2) effecting amplification of ~~the~~ said nucleotide sequence ~~nucleic acids~~;

(3) contacting the biological sample containing said amplified sequences from step (2) with a nucleotide probe ~~that hybridizes at 68°C in a 5xSSC hybridization buffer with one of the sequences~~ comprises a sequence selected from the group consisting of SEQ ID No: 1, SEQ ID No: 2, ~~the~~ a complement of SEQ ID No: 1, and ~~the~~ a complement of SEQ ID No: 2, ~~their~~ a corresponding RNA sequence[~~e~~] of SEQ ID No: 1, SEQ ID No: 2, a complement of SEQ ID No: 1 or a complement of SEQ ID No: 2, ~~or their~~ a corresponding gene of said RNA sequence, and a successive sequence of SEQ ID No: 1 followed by SEQ ID No: 2, and that contains a maximum of 21 base pairs under conditions for formation of hybridization complexes between ~~the~~ said probe and said amplified nucleotide sequences from step (2) ~~of nucleic acids~~; and

(4) detecting if any hybridization complexes are present, which complexes indicate ~~the~~ a presence of a mycobacteria strain of *M. tuberculosis* complex.

Claim 48 (Canceled)

Claim 49 (Currently Amended)

The method of claim 47 wherein the nucleotide probe comprises ~~a region of SEQ ID No: 2 comprising the GAC codon in positions 40 to 42 or the complement of said region~~ a sequence composed of nucleotides in positions 31 to 51 of SEQ ID No: 2 or a complement of said sequence.

Claim 50 (previously presented)

The method of claim 49 effected upon immunodeficient humans to differentiate an infection by BCG from an infection by a virulent mycobacterium of M. tuberculosis complex.

Claim 51 (previously presented)

The method of claim 50 wherein the human is infected with HIV.

Claim 52 (Currently Amended)

A method of identifying groups of mycobacteria belonging to a M. tuberculosis complex comprising (1) contacting ~~the~~ a DNA of previously extracted strains of the M. tuberculosis complex with a nucleotide primer pair comprising a pair of primers 5'GCGCGAGAGCCCGAACTGC3' (SEQ

ID No: 4) and 5'GCGCAGCAGAAACGTCAGC3' (SEQ ID No: 5)—of ~~claims 35 and 42~~ under conditions permitting a ~~specific~~ hybridization of the primers respectively 56 base pairs upstream and 62 base pairs downstream of ~~with one of the sequences of claim 28~~ a sequence selected from the group consisting of SEQ ID No: 1, SEQ ID No: 2, a complement of SEQ ID No: 1 and a complement of SEQ ID No: 2, to obtain amplification products and (2) measuring ~~the~~ a length of the amplification products obtained from step (1).

Claim 53 (Canceled)

Claim 54 (Currently Amended)

A kit for in vitro identification of strains of mycobacteria of a ~~the~~ M. tuberculosis complex in a biological sample comprising ~~(1) a primer pair for amplification of a specific nucleotide sequence of mycobacteria of M. tuberculosis complex, one primer consisting of the nucleotide sequence of sequences adjacent to the senX3-regX3 region in the 3' of senX3 region and the other primer consisting of the nucleotide sequence of sequences adjacent to the senX3-regX3 region in the 5' of regX3 region~~ a pair of primers 5'GCGCGAGAGCCCGAACTGC3' (SEQ ID No: 4) and 5'GCGCAGCAGAAACGTCAGC3' (SEQ ID No: 5).

Claim 55 (Currently Amended)

A method of detection and of differential diagnosis of BCG and the members of M. tuberculosis complex in a biological sample comprising:

(1) contacting the biological sample to a nucleotide primer pair comprising a pair of primers 5'GCGCGAGAGCCCGAACTGC3' (SEQ ID No: 4) and 5'GCGCAGCAGAAACGTCAGC3' (SEQ ID No: 5) for amplification of a ~~specific~~ nucleotide sequence of mycobacteria of M. tuberculosis complex, ~~one primer comprising the nucleotide sequence of sequences adjacent to the senX3-regX3 region in the 3' of senX3 region and the other primer comprising the nucleotide sequence of sequences adjacent to the senX3-regX3 region in the 5' of regX3 region~~ under conditions to effect hybridization of the primers to said nucleotide sequence ~~the specific nucleic acids~~ of mycobacteria strains of M. tuberculosis complex;

(2) effecting amplification of ~~the~~ said nucleotide sequence ~~nucleic acids~~;

(3) contacting the biological sample containing amplified nucleotide sequences from step (2) with a nucleotide probe of two successive sequences SEQ ID No: 1 followed by a sequence SEQ ID No: 2 under conditions for

formation of hybridization complexes between ~~the~~ said probe and said amplified nucleotide sequences from step (2) ~~of nucleic acids;~~

(4) detecting any first hybridization complexes present; and

(5) determining if said first hybridization complexes are also capable of forming second hybridization complexes with a nucleotide probe for detection of ~~specific~~ sequences of nucleic acids of M. tuberculosis complex other than BCG comprising a ~~region of sequence SEQ ID No: 2 comprising the CAG codon in positions 40 to 42~~ sequence composed of nucleotides in positions 31 to 51 of SEQ ID No:2, or the a complement of said sequence region, ~~the a~~ presence of said second hybridization complexes being indicative of ~~the a~~ presence of a M. tuberculosis strain different from BCG and ~~the a~~ presence of said first hybridization complexes uniquely being indicative of the BCG.